

Amendments to the Claims:

Claims 1, 3, 8, 9 and 16 to 29 are cancelled and claims 4, 10, 11 and 13 are amended and read as set forth hereinafter.

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Cancelled).

2. (Original) A microscope arrangement for generating a stereoscopic image of an object for viewing by an observer through left and right oculars of a microscope at a frequency greater than a flicker frequency of the human eye, the microscope arrangement comprising:

a single microscope objective for imaging said object and defining an imaging beam path as well as an entry pupil and an exit pupil along a single optical channel;

illuminating optics for illuminating said object by

providing an imaging beam coming from said object and passing through said objective and along said imaging beam path;

means for alternately blocking a section of said imaging beam in said imaging beam path on said single optical channel to form two component beams at a clock frequency greater than said flicker frequency of the human eye with said blocking means being

disposed at or near said exit pupil or at a position along said imaging beam path which is optically conjugated to said exit pupil, thereby forming a left image and a right image for a stereo pair;

20 means for transmitting said left and right images to said left and right oculars of said microscope for viewing by said observer; and,

said blocking means including a DMD mirror arrangement for forming said left image and said right image for said stereo  
25 pair.

3. (Cancelled).

4. (Currently Amended) The microscope arrangement of ~~claim 3,~~  
claim 2, further comprising a diaphragm mounted at one of the following locations: in said exit pupil, near said exit pupil or at a position along said imaging beam path which is optically  
5 conjugated to said exit pupil; and, said diaphragm being configured to optimize contrast, resolution and depth of field of the stereoscopic image.

5. (Original) The microscope arrangement of claim 4, wherein said blocking means includes means for performing a diaphragm function which is changeable with respect to at least one of its diaphragm size and diaphragm form.

6. (Previously Presented) The microscope arrangement of claim 4, said diaphragm being an adjustable diaphragm.

7. (Previously Presented) The microscope arrangement of claim 6, wherein said diaphragm can be exchanged for another element having a different form and dimensions.

Claims 8 to 9 (Cancelled).

10. (Currently Amended) ~~The microscope arrangement of claim 9,~~  
wherein A microscope arrangement for generating a stereoscopic image of an object for viewing by an observer at a frequency greater than a flicker frequency of the human eye, the microscope arrangement comprising:

5       a single microscope objective for imaging said object and defining an imaging beam path as well as an entry pupil and an exit pupil along a single optical channel;

illuminating optics for illuminating said object by providing an imaging beam coming from said object and passing  
10       through said objective and along said imaging beam path;

means for alternately blocking a section of said imaging beam in said imaging beam path along said single optical channel to form two component beams at a clock frequency greater than said flicker frequency with said blocking means being disposed at  
15       or near said exit pupil or at a position along said imaging beam path which is optically conjugated to said exit pupil, thereby forming the left image and right image for a stereo pair for viewing by said observer with the left and right eyes;

a video camera;  
20       means for transmitting said stereoscopic sectional images to said video camera;

a 3D display device connected to said video camera to facilitate viewing of said left and right images by said observer; and.

said blocking means ~~is~~ being a DMD mirror.

11. (Currently Amended) The microscope arrangement of ~~claim 9,~~  
claim 10, further comprising a diaphragm mounted at one of the  
following locations: in said exit pupil, near said exit pupil or  
at a position along said imaging beam path which is optically  
5 conjugated to said exit pupil.

12. (Original) The microscope arrangement of claim 11, wherein  
said diaphragm is configured as one of the following: a circular  
diaphragm, a rectangular diaphragm or an iris diaphragm.

13. (Currently Amended) The microscope arrangement of claim 11,  
wherein ~~said blocking means is a DMD mirror or an LCD modulator~~  
which includes means for performing a diaphragm function which is  
changeable with respect to at least one of its diaphragm size and  
5 diaphragm form.

14. (Previously Presented) The microscope arrangement of  
claim 11, said diaphragm being an adjustable diaphragm.

15. (Previously Presented) The microscope arrangement of  
claim 14, wherein said diaphragm can be exchanged for another  
element having a different form and dimensions.

Claims 16 to 29 (Cancelled).